DOCUMENT RESUME

ED 328 818 CG 023 124

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TITLE Childhood Psychopathology as a Predictor of Violent Criminal Behavior.
PUB DATE Aug 90
NOTE 13p.; Paper presented at the Annual Convention of the American Psychological Association (98th, Boston, MA, August 10-14, 1990).
PUB TYPE Speeches/Conference Papers (150)

EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS Antisocial Behavior; *At Risk Persons; Behavior Patterns; *Children; *Crime; Foreign Countries; *Hyperactivity; Longitudinal Studies; *Predictor Variables; *Psychopathology
IDENTIFIERS *Denmark

ABSTRACT

Hyperactive children appear to be at an increased risk for antisocial behavior in life. Follow-up studies using self-report and official criminal data have found that hyperactive children are more likely than controls to commit crimes, to be arrested for crimes, to be convicted of crimes, and to be diagnosed with Antisocial Personality Disorder in their adolescent and adult years. This study examined the relationship between childhood hyperactivity and adult violent criminal behavior utilizing prospective, longitudinal data from a Danish birth cohort of 129 males. Hyperactivity was measured by teacher, parent and neurologist ratings of behavior completed when the subjects were 11-13 years old. Police records of violent criminal behavior were ascertained when the subjects were 20-22 years old. The results supported the view that hyperactivity in childhood predicts an increased risk of violent offending later in life. Subjects who were pervasively hyperactive (rated hyperactive by teacher, neurologist, and parent report) seemed especially prone to violent behavior, with over one-third showing a criminal arrest for violence by early adulthood. Previous research findings, taken together with the results of this study, suggest that very early central nervous system dysfunction may predispose individuals to hyperactive behavior, and that this behavior in turn may increase the likelihood that they will develop into adult violent offenders. (ABL)

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CHILDHOOD PSYCHOPATHOLOGY AS A PREDICTOR OF VIOLENT CRIMINAL BEHAVIOR

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Paper presented at the 98th Annual Convention of the American Psychological Association, Boston, MA, August 1990

CG023124

Abstract

The relationship between childhood hyperactivity and adult violent criminal behavior was assessed utilizing prospective, longitudinal data from a Danish birth cohort of 129 males. Hyperactivity was measured by teacher, parent and neurologist ratings of behavior completed when the subjects were 11-13 years old. Police records of violent criminal behavior were ascertained when the subjects were 20-22 years old. The results of this study support the hypothesis that hyperactivity in childhood predicts to an increased risk of violent offending later in life. Subjects who were pervasively hyperactive (rated hyperactive by teacher, neurologist, and parent report) seemed especially prone to violent behavior, with over one third showing a criminal arrest for violence by early adulthood.

Childhood Psychopathology as a Predictor of Violent Criminal Behavior

Hyperactive children appear to be at an increased risk for antisocial behavior later in life. Follow-up studies using self-report and official criminal data have found that hyperactive children are more likely than controls to commit crimes, to be arrested for crimes, to be convicted for crimes and to be diagnosed with Antisocial Personality Disorder in their adolescent and adult years. In this study, we examine whether hyperactive children are also at an increased risk for violent criminal behavior later in life.

Only one other study to date has separated out violent offenses from other types of offenses in its examination of the relationship between hyperactivity and antisocial behavior (Loney, Whaley-Kahn, Kosier & Conboy, 1983). This study compared self reports of criminal behavior for 22 hyperactive young men and their brothers, and found a significant relationship between hyperactivity and the commission of violent behavior. Specifically, the hyperactive subjects were found to be more likely than their nonhyperactive brothers to have carried a gun or knife, to have been in a fight where weapons were used, or to have threatened to hurt or almost hurt someone. Unfortunately, no official crime data was collected in order to confirm these findings.

Many of the follow-up studies which have been completed on hyperactivity and antisocial behavior suffer from methodological limitations. Several of the studies utilized control groups which were not well matched for age, socio-economic status and IQ. Because these variables are possible confounds in research on criminality, differences in antisocial behavior between groups could not necessarily be attributed to the presence or absence of hyperactivity. Poor matching for age is especially problematic given the finding that antisocial behavior drops off rapidly in young adulthood (Weiss, Hechtman, Perlman, Hopkins, & Wener, 1979).

Many of these follow-up studies also suffer from a very high attrition rate. Weiss and her colleagues, for example, were only able to locate 63 of their original 104 subjects at a 15 year follow-up (1985). Presumably the subjects who could not be located at follow-up were some of the more deviant individuals in the sample. Losing the data for these subjects confounds any findings concerned with the rate of antisocial behavior.

Another potential difficulty with many of these studies was the sole use of self report data on criminal behavior. It seems probable that hyperactive subjects would more readily report crime than controls. They are likely to be more impulsive and to "blurt out" the truth before any consideration of social desirability can take place. Given this possible

confound, a measure of official criminality is suggested for a more accurate assessment of the relationship between hyperactivity and antisocial behavior.

In the current study we utilized prospective longitudinal data from a Danish birth cohort to assess whether hyperactive children were more likely than nonhyperactive children to commit violent behavior later in life. Comparison groups were available in the birth cohort, and potential confounds were considered and their effects controlled. Official crime data was utilized; reliance on self report data was not necessary. Due to the highly comprehensive and accurate National Registers in Denmark, follow-up crime data was available on all of the original subjects in the cohort. Attrition, therefore, was not a problem in this study.

It was hypothesized that hyperactive subjects would be at an increased risk for committing violent crimes later in life. Specifically, we predicted that hyperactive subjects would be arrested more often than nonhyperactive subjects for violent criminal offenses, and that this relationship would remain significant even when potiential confounds were controlled.

Method

Subjects

Subjects were 129 males from a Danish birth cohort who were chosen to participate in a prospective study of children at high risk for delinquency. This sample consisted of 72 males with a parental history of psychological deviance and 57 matched controls. (Females were also included in the larger prospective study. However, they were not included in this sample due to their very low rates of violent offending).

Hyperactive Behavior

Neurologist's rating. During the course of one day of intensive evaluation in 1972, a pediatric neurologist assessed each of the subjects by means of a behavior rating scale. Five items (activity and concentration levels, restlessness, disractibility, and fussiness/fidgetiness) were selected from this rating scale to form a measure of hyperactive behavior. Reliability analysis on this rating scale of hyperactivity resulted in an alpha coefficient of .92. Most of the subjects obtained a score of zero on this measure; subjects with scores greater than zero were considered hyperactive according to the neurologist's rating.

Parent's rating. Social workers conducted interviews with the mothers of each of the subjects in 1972. Included in these interviews was a behavior rating scale in which the mothers were asked to check the presence or absence of specific behavior problems. Two

items on this behavior rating scale reflected hyperactivity--(1) restlessness and (2) a poor ability to concentrate. Subjects were considered hyperactive according to their mother's rating if either of these behaviors were rated as present in the home setting.

Teacher's rating. Teachers filled out a behavior rating questionnaire for each of the subjects in 1972. Eight items on this questionnaire were selected rationally to form a measure of hyperactive behavior. These items included: an irresistible urge to touch things, tendency to leave seat, restlessness while sitting, tendency to interrupt teacher, auditory and visual distractibility, and inability to concentrate, and a "jumpy" way of thinking. Reliability analysis of this measure of hyperactivity resulted in an alpha coefficient of .81. Subjects were considered hyperactive according to their teachers' rating if any one teacher endorsed two or more of these problem behaviors on the questionnaire.

Violent Crime

Arrest records were ascertained in 1981, when subjects were between 20 and 22 years old. Violent offenses included domestic violence, illegal possession of a weapon, threats of violence, robbery, armed robbery, assault and murder.

Results

Individual Ratings of Hyperactivity

Table 1 presents chi-square analysis results for violent crime by neurologist, parent and teacher ratings of hyperactive behavior. Neurologist and parent ratings of hyperactivity were found to be significantly related to arrests for violent crime. The relationship between the teacher rating of hyperactivity and arrests for violence was not significant.

Insert Table 1 about here.

Pervasive vs. Situational Hyperactivity

A combined measure of hyperactivity was created in order to assess differential effects of situational versus pervasive hyperactivity. In order to tabulate the score on the combined measure, subjects' scores on each of the individual measures were transformed into zero for nonhyperactive and one for hyperactive. The transformed scores were then added, yielding a combined score of zero to three. A score of zero reflects a rating of nonhyperactive by all three sources; scores of one and two reflect a rating of hyperactive by one or two sources (situational hyperactivity); and a score of three reflects pervasive hyperactivity--a rating of hyperactive by all three sources in the study. Figure 1 presents

the relationship between this combined measure of hyperactivity and violent criminal behavior.

Insert Figure 1 about here.

While only six to thirteen percent of the nonhyperactive and situationally hyperactive subjects were arrested for a violent crime, 36.84 percent of the pervasively hyperactive subjects displayed violent behavior later in life ($\chi^2 = 13.20$, $p<.01$).

Recidivism and Hyperactivity

Table 2 presents chi-square analysis results for neurologist, parent and teacher ratings of hyperactive behavior versus recidivistic violent crime. Neurologist, parent, and teacher ratings of hyperactivity were found to be significantly related to multiple arrests for violent crime.

Insert Table 2 about here.

Figure 2 presents the relationship between the combined measure of hyperactivity and violent recidivism. Whereas only 3.9% of the nonhyperactive and 2.4% of the situationally hyperactive subjects had multiple arrests for violence, 31.6% of the pervasively hyperactive subjects were recidivistically violent ($\chi^2 = 22.10$, $p<.001$). Moreover, 66.7% of the violent recidivists in this sample had been rated as hyperactive by parent, teacher, and neurologist ratings early in life.

Insert Figure 2 about here.

Potential Confounds

Age, socioeconomic status, IQ, childhood conduct problems, parental psychiatric diagnosis, parental alcohol intake, and father's criminal record are all potential confounds in this study. When these variables are controlled for through logistic regression, the combined rating of hyperactivity is still found to be a significant predictor in arrests for violent offending.

Discussion

The results of this study support the hypothesis that hyperactivity in childhood predicts to an increased risk of violent offending later in life. Subjects who were pervasively hyperactive (rated hyperactive by teacher, neurologist, and parent report) seemed especially prone to violent behavior, with over one third showing a criminal arrest for violence by early adulthood. Individual ratings and combined ratings of hyperactivity were also found to be especially related to violent recidivism in this sample.

Either situational or constitutional factors may cause a child to appear hyperactive, and to be rated as such by an adult observer. If a child appears hyperactive in one or two settings and nonhyperactive in others, situational factors may likely underlie the hyperactive behavior. If a child is pervasively hyperactive, however, then constitutional factors would seem more likely to underlie his hyperactivity. Similarly, either situational or constitutional factors may be at the basis for violent behavior. A single arrest for violence may reflect situational causes. However, multiple arrests for violence seem to imply more constitutional reasons for the violent behavior. In this study, the strongest relationship between hyperactivity and violence was found for those subjects who were pervasively hyperactive, and for violent recidivism. It is therefore suggested that some common constitutional factor may underlie both the pervasive hyperactivity and the violent recidivism in these subjects. Past research from our laboratory has suggested relationships between minor physical anomalies (an indicant of prenatal central nervous system dysfunction) and hyperactivity (Fogel, Mednick, & Michelsen, 1985), and minor physical anomalies and violent recidivism (Kandel, Brennan, & Mednick, 1989). These findings, taken together with the results of the present study, suggest that very early central nervous system dysfunction may predispose individuals to hyperactive behavior, and that this behavior in turn may increase the likelihood that they will develop into adult violent offenders.

References

Fogel, C. A., Mednick, S. A., & Michelsen, N. (1985). Hyperactive behavior and minor physical anomalies. Acta Psychiatrica Scandinavica, 75, 551-556.

Kandel, E., Brennan, P. A., & Mednick, S. A. (1989). Minor physical anomalies and adult recidivistic violent offending. Acta Psychiatrica Scandinavica, 79. 103-107.

Loney, J., Whaley-Kahn, M., Kosier, T., & Conboy, J. (1983). Hyperactive boys and their brothers at age 21: Predictors of aggressive and antisocial outcomes. In K.T. Van Dusen & S. A. Mednick (Eds.), Prospective studies in crime and delinquency (pp. 181-207). Boston: Kluwer-Nijhoff.

Weiss, G., Hechtman, L., Milroy, T., & Perlman, T. (1985). Psychiatric status of hyperactives as adults: A controlled prospective 15 year follow-up of 63 hyperactive children. Journal of the American Academy of Child Psychiatry, 24, 211-220.

Weiss, G., Hechtman, L., Perlman, T., Hopkins, J., & Wener, A. (1979). Hyperactives as young adults: A controlled prospective ten year follow-up of 75 children. Archives of General Psychiatry, 36, 675-681.

Percentages of hyperactive and nonhyperactive subjects who exhibited violent behavior

	Percent arrested for violent crime	Chi-Square	N
Neurologist rating			
Hyperactive	23.4%		47
Nonhyperactive	6.1%	8.24 **	82
Parent rating			
Hyperactive	19.6%		56
Nonhyperactive	6.8%	4.77 *	73
Teacher rating			
Hyperactive	14.4%		69
Nonhyperactive	10.0%	.59	60

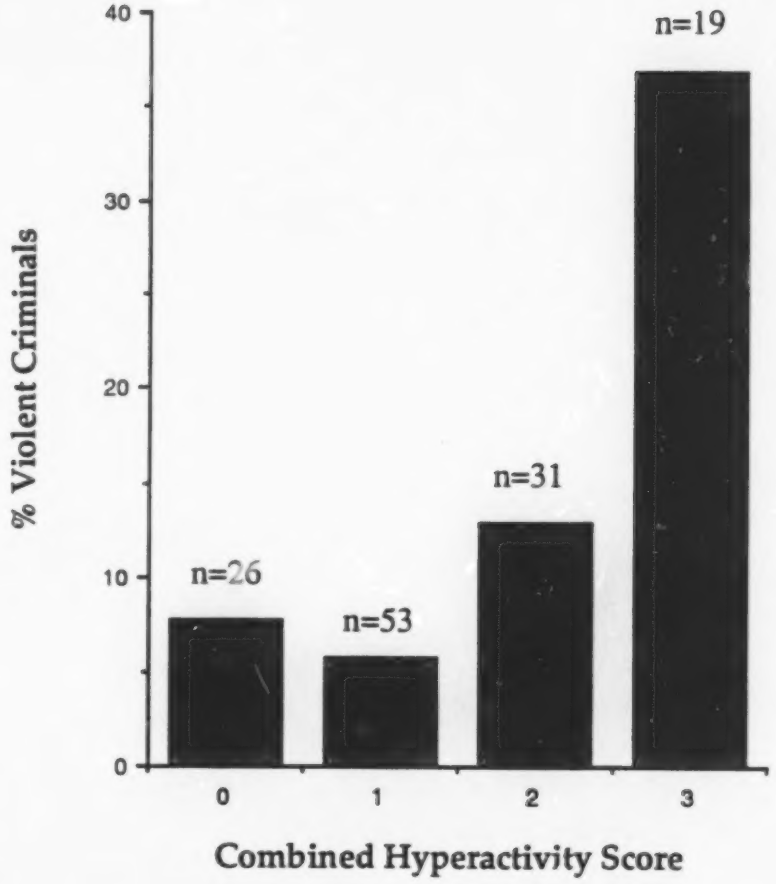
* $p < .05$
** $p < .01$

Percentages of hyperactive and nonhyperactive subjects who exhibited recidivistic violent behavior

	Percent arrested for two or more times for violent crimes	Chi-Square	N
Neurologist rating			
Hyperactive	14.89%		47
Nonhyperactive	2.44%	7.14 *	82
Parent rating			
Hyperactive	12.50%		56
Nonhyperactive	2.74%	4.65 *	73
Teacher rating			
Hyperactive	11.59%		69
Nonhyperactive	1.67%	4.87*	60

* $p < .05$

Relationship Between Combined Measures of Hyperactivity and Violent Criminal Behavior



Relationship Between Combined Measures of Hyperactivity and Recidivistic Violent Crime